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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,050	12/06/2001	Jason Charles Pelly	450110-03706	9597

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EXAMINER
STREGE, JOHN B

ART UNIT	PAPER NUMBER
2625	

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.
10/006,050</td><td>Applicant(s)
PELLY ET AL.</td></tr>
<tr><td>Examiner
John B. Strege</td><td>Art Unit
2625</td></tr>
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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 December 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-89</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-5, 12-15, 18-27, 34, 35, 38-48, 55-58, 61-69, 74-76 and 79-88</u> is/are rejected.

7)☒ Claim(s) <u>6-11, 16, 17, 36, 37, 49-54, 59, 60, 70-73, 77 and 78</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>06 December 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>9/15/03, 9/25/02</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 7-05)   Office Action Summary   Part of Paper No./Mail Date 20051104

DETAILED ACTION

The preliminary amendment filed 12/6/01 has been entered in full.

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 83-87 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 83-87 are drawn to functional descriptive material NOT claimed as residing on a computer readable medium.   MPEP 2106.IV.B.1(a) (Functional Descriptive Material) states:

"Data structures not claimed as embodied in a computer-readable medium are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer."

"Such claimed data structures do not define any structural or functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized."

Claim 83-87, while defining a data carrier does not define a "computer-readable medium" and is thus non-statutory for that reasons. A data carrier can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" in order to make the claim statutory.

"In contrast, a claimed computer-readable medium encoded with the data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory." - MPEP 2106.IV.B.1(a)

Claim Objections

2.   Claims 13,23,44 are objected to because of the following informalities: on line 3

of claim 13 the word "form" should be changed to "from". Appropriate correction is

required.

Claim 23 is objected to because an apparatus claim can not incorporate a

method claim, and additionally because it has the same limitations of claim 45. Claim 44

is objected to for the same reason.

Claims 28-33 are objected to under 37 CFR 1.75(c) as being in improper form

because a multiple dependent claim must refer in the alternative to multiple claims. See

MPEP § 608.01(n). Accordingly, the claims 28-33 have not been further treated on the

merits.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

4.   Claims 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

Claim 2 discloses that the modifications do not represent data. In reading the

specification it appears that this should read that the modifications do not represent

intelligible data (page 4 lines 18-19), however limitations are not read into the claims

based on the specification. In the manner in which the claim is written it discloses an

impossibility since everything on a digital level reflects data it would be impossible that a

modification made on a digital level would not represent data. Therefore the limitation is

indefinite. Even if the terminology intelligible is in place the limitation is still undefinite

because it gives no indication of intelligible data being that which is distinguishable by a

human or that which is distinguishable by a computer. For faster prosecution the

examiner will consider that the limation means that it does not represent intelligible data,

however the correction is required in order to overcome the 112 rejection.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5,12-15,18-27,34-35,38-48,55-58,61-69,74-76,79-88 are rejected under

35 U.S.C. 103(a) as being unpatentable over Girod et al. USPN 5,809,139 (hereinafter

"Girod") in view of Chung et al. USPN 6,310,962 (hereinafter "Chung").

Girod discloses a method of modifying material represented by information

signals, comprising deriving digital representations of transform coefficients of the

information signals (transform coding a video signal with a discrete cosine transform,

col. 2 lines 1-3), and modifying (watermarking is read as modifying, col. 1 lines 63-67)

and entropy encoding (col. 2 line 15-16) said digital representations, wherein at least

some of said digital representations are modified by making pseudo random changes to

them (col. 1 lines 63-67) which changes do not substantially change the number of

entropy encoded bits (col. 2 lines 35-36, and col. 1 lines 45-50).

Girod does not explicitly disclose that the pseudo random changes are made in

accordance with a substantially invertible algorithm, however it would be obvious to one

of ordinary skill in the art to restore the original image by using an invertible algorithm so

that further processing can be carried out on the image by authorized users. Chung et

al. Discloses an MPEG2 moving picture encoding/decoding system which uses a digital

watermark inserter (240 figure 6) and a digital watermark remover (242 figure 6) to

decode the embedded visual watermark information. Chung states that there is a

problem where in case the image quality of an image that contains watermark

information deteriorates conspicuously in comparison with the image quality where the

watermark information is not contained, the meaning can be lost because the image can

deteriorate even though the original object contains watermark information (col. 5 lines

52-57). The invention as disclosed by Chung can be used by MPEG moving picture

compression/decompression application that are based on the discrete cosine transform

such as the system of Girod. The advantage of the system of Chung is that it provides a

system for an authorized user to restore the original image in a digital copy protection

apparatus, and it prevents an error while estimating motion on a temporal domain (col. 5

line 63 – col. 6 line 31).

Regarding claim 2, a watermark is not visible to a user thus does not represent

intelligible data.

Regarding claim 3, the video signal of Girod is quantitized (col. 2 lines 10-11).

Regarding claim 4, the changes in the material would be perceptible to a

computer.

Regarding claim 5, Girod discloses that a goup of the signal is pseudo randomly

changed by determining whether one or more transpositions of the group exist which do

not increase the number of entropy encoded bits (col. 1 line 43- col. 2 line 16).

Regarding claim 12, Girod discloses receiving digital representations, applying a

transform therto to derive coefficients, and quantizing the transform coeffeicients

(paragraph bridging cols. 1-2).

Regarding claim 13, Girod discloses receiving an entropy encoded bitstream

representing transform coefficients and extracting from the bitstream codes which

represent the coefficients (col. 2 lines 9-32).

Regarding claim 14, it is inherent that the material must be selected to be

modified.

Regarding claim 15, Girod discloses a bitstream thus encompassing various bitmaps with varying levels.

Regarding claims 18-20, Girod discloses blocks compromising DC and AC coefficient and the selecting step select AC coefficients for change in some blocks and DC coefficients for change in others (col. 6 lines 27-45).

Regarding claim 21, as discussed the transform coefficients are DCT.

Regarding claim 22, the method takes place on a computer system.

Regarding claim 23, Girod discloses a method and apparatus.

Regarding claim 24, Chung discloses variable length coding of a Huffman code (entropy encoding, col. 4 line 58) extracting codes representing the digital representations and applying the inverse of the invertible algorithm to the codes (numeral 242 in figure 6).

Regarding claim 25, as seen in numeral 216 the coefficients are quantized.

Claim 26 has the same limitations as claim 5, thus the same argument applies.

Regarding claim 27, it is well known to derive a pseudo random number from a key, thus official notice is declared. It would be obvious to use a key since it is the method that is normally used to choose random numbers.

Claims 34-35 are similar to claim 15, thus the same argument used for claim 15 applies equally to claims 34-35.

Claim 38 is similar to claim 18 thus the same argument used for claim 38 applies equally to claim 18.

Claim 39 is similar to claim19 thus the same argument used for claim 39 applies equally to claim 19.

Claims 40-41 are similar to claims 20-21 thus the same argument used for claims 40-41 applies equally to claim 20-21.

Regarding claim 42, as seen by numeral 242 Chung discloses inverse change data to remove the watermark.

Regarding claim 43, the method of Girod is carried out on a computer readable medium.

Regarding claim 44, Girod discloses a method and apparatus.

Claim 45 is similar to claim 1, except claim 45 is an apparatus. Girod discloses both an apparatus and method.

Claim 46 has similar limitations to claim 1, thus the same arguments apply to the rejection of claim 46.

Regarding claim 47, the processing adds a watermark which is perceptible to a computer.

Claim 48 is similar to claim 5, thus the same rejection used for claim 5 applies equally to claim 48.

Claims 55-56 are similar to claims 12-13, thus the same arguments used for claims 12-13 apply equally to claims 55-56.

Claim 57 is similar to claim 14, thus the same argument used for claim 14 applies equally to claim 57.

Claims 58 is similar to claims 15, thus the same argument used for claims 15 apply equally to claims 58.

Claims 61-63 are similar to claims 18-20, thus the same arguments used for claims 18-20 apply equally to claims 61-63.

Claims 64-65 are similar to claims 20-22 thus the same argument used for claims 20-22 apply equally to claims 64-65.

Claim 66 is similar to claim 24 thus the same argument used for claim 24 applies equally to claim 66.

Claim 67 is similar to claim 26 thus the same argument used for claim 26 applies equally to claim 67.

Claim 68 is similar to claim 27 thus the same argument used for claim 27 applies equally to claim 68.

Regarding claim 69, as seen by numeral 242 Chung discloses inverse change data to remove the watermark.

Claim 74 is similar to claim 48, thus the same arguments apply.

Regarding claim 75, as seen by numeral 242 Chung discloses inverse change data to remove the watermark.

Claim 76 is similar to claim 35, thus the same argument applies.

Claim 79 is similar to claim 38 thus the same argument used for claim 38 applies equally to claim 79.

Claims 80-82 are similar to claims 39-41 thus the same argument used for claim 39-41 apply equally to claims 80-82.

Claims 83-84 are broad claims which could be read with any reference which carries out watermarking, and since both Girod and Chung disclose watermarking they meet the limitations of these claims.

Regarding claims 85-86, as discussed Girod discloses using pseudo random numbers.

Regarding claim 87, Girod discloses data relating to the magnitude of modification (paragraph bridging cols. 1-2).

Regarding claim 88, Girod discloses carrying the apparatus out on video signals (col. 1 lines 1-3).

Allowable Subject Matter

6.   Claims 6-11,16-17,36-37,49-54,59-60,70-73, and 77-78 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN 6,192,138 Apparatus and method for embedding/unembedding supplemental information.

USPN 5,930,369 Secure Spread Spectrum Watermarking for multimedia data.

USPN 6,341,350 Device and Method for processing image data, transmitting medium, and recording medium.

USPN 6,549,666 Reversible Embedded wavelet system implementation.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Strege whose telephone number is (571) 272-7457. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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